Dec. 7, 1965 J. GROMMES 3,221,355

GOLF BALL CLEANER

Filed Dec. 4, 1961

FIG. 1

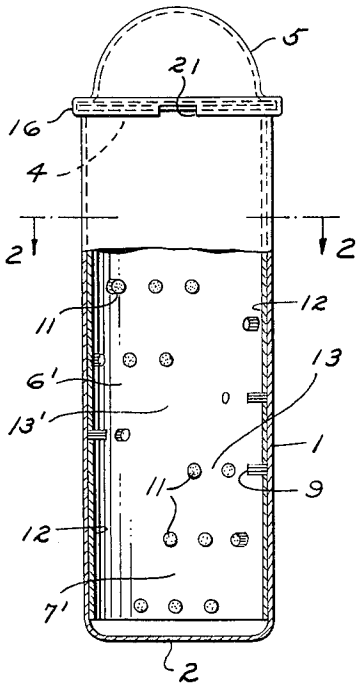


FIG. 2

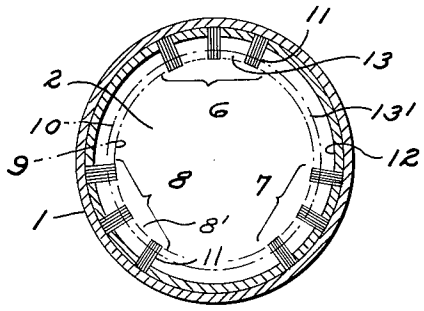


FIG. 3

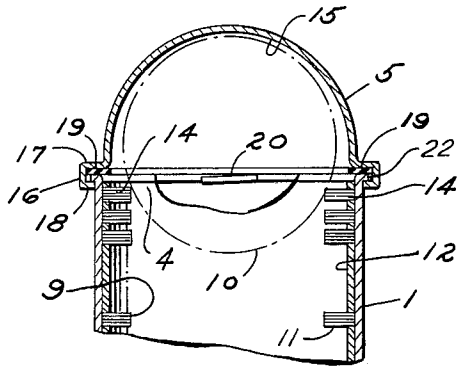


FIG. 4

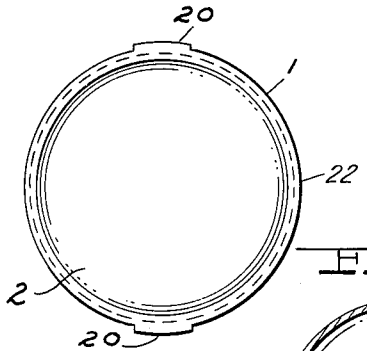


FIG. 5

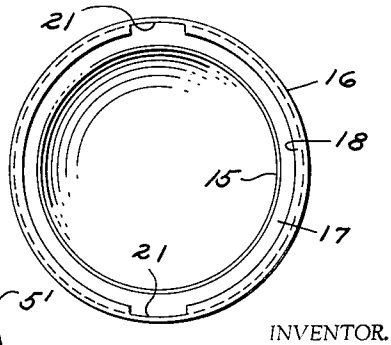
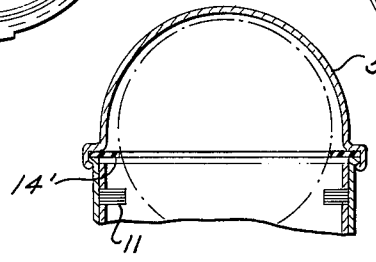


FIG. 6



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GOLF BALL CLEANER

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This invention relates to a portable cleaning device for golf balls.

It is very desirable in a game of golf to use balls which are free of dirt and have a clean white surface. Accumulations on the ball may affect its roll, especially when putting and, additionally, render it more difficult to locate should it inadvertently end up in the rough. Permanently positioned golf ball cleaners are usually provided at spaced locations around the course. Thus, a golfer must carry a supply of clean balls, using a new one whenever the one he has previously been playing with becomes dirty and then when he reaches one of the permanently installed cleaners, he will clean his whole supply of balls. Often, however, these permanently positioned cleaners are in disrepair or otherwise unsatisfactory for want of cleaning solution. Moreover, these permanently positioned cleaners are not strategically placed to coincide with an individual golfer's need which often depends on fortuitous circumstances.

It is, therefore, an object of this invention to provide a portable golf ball cleaner of minimum size which may be carried about by the golfer and used in accordance with his needs, which provides efficient cleaning when used with a liquid cleaning solution, such as a detergent or the like and yet is tidy and simple to operate.

More particularly, this invention contemplates a portable golf ball cleaner having a particular arrangement of cleaning brushes which in combination with other parts of the device facilitate efficient cleaning and positive positioning of the ball in an easily retrievable position when cleaning is completed.

The invention in its preferred embodiment uses a hollow cylindrical case or shell which is closed at one end to contain a cleaning solution and has radially inward extending bristles arranged in a particular pattern on the interior of the case. When a ball to be cleaned is placed in the open end, it rests upon a row of stiff but flexible bristles and can be easily grasped by the operator. It is here noted that the ball can be cause to assume this same position at the completion of the cleaning operation with infallible predictability. A removable cup-like cap having a concave cross section to accommodate a substantial part of the ball may be tightly secured in place over the mouth of the cylindrical shell. Shaking the container in its axial direction causes relative motion between the bristles and the ball, the bristles scrubbing the ball clean. Particularly efficient scrubbing may be obtained by arranging the bristles to present axially-extending, helical, brushing surfaces which cause the ball to rotate as it moves axially within the cleaning device.

Further advantages will be apparent in light of the following description when read in conjunction with the accompanying drawings.

The various views may be briefly described as:

FIGURE 1, a plan view of the preferred embodiment having a lower cut-away portion to expose the particular helically arranged bristles.

FIGURE 2, a cross-section view on lines 2—2 of FIGURE 1, illustrating the circumferential spacings of the brushes, only brushes nearest the cut being shown.

FIGURE 3, a sectional view of the upper end with the cap secured in place showing the sealing and locking mechanisms and additionally the axial arrangement of the retaining and brushing bristles.

FIGURE 4, a top view of the device with the cap removed illustrating the locking flanges which secure the top in place.

FIGURE 5, a view of the cap looking into its interior and illustrating the sealing and locking mechanisms carried thereon.

FIGURE 6 illustrates alternative embodiments of the dome-shaped cap and the golf ball positioning means.

In the drawings:

The case of the cleaner is shown as a hollow cylindrical body 1 having a closed lower end 2 and an open upper end 4, illustrated in FIGURE 1 as being covered with a removable dome-shaped cap 5. Brushing material indicated generally at 6, 7 and 8 is located within the cylindrical body and extends radially inward to define a cylindrical brushing surface 9 having a diameter slightly less than the exterior of an ordinary golf ball 10. While preferably the brushing material comprises bristle tuffs 11, other material such as matting or sponges could be used.

These brushes are arranged in circumferential groups 6, 7 and 8, as best illustrated in FIGURE 2, which form helical brushing surfaces 6', 7', 8' as the progress from the open to the closed end. Each helical brushing surface includes a plurality of bristle tuffs 11 which are shown in both vertical and horizontal alignment but may be positioned at random within the helical surface. The bristle may be in a suitable binder or attached directly to the side walls by techniques well known to the art. Preferably, the bristles are embedded in a removable sleeve 12 to facilitate replacement should they become worn.

For my preferred embodiment I have found that three groups of bristles having centers approximately 120° apart impart sufficient rotation to the ball for efficient cleaning. As shown in FIGURE 1, the bristle tuffs 11 in these groups are circumferentially staggered progressively along the axis of the cylinder to form the helical brushing surfaces 6', 7', 8' previously referred to. Each helical surface has a pitch two or three times the length of the cylindrical container. It is also noted that the circumferential spacing 13 between the rows of bristles tuffs in each group, is less the spacing 13' between adjacent groups to obtain the discrete helical brushing surfaces.

Another important aspect of my invention is best illustrated in FIGURE 3 and is directed to a novel arrangement for assuring simple and easy removal of the ball after the cleaning operation. To accomplish this purpose, I provide a substantially continuous circumferential row of stiff retaining tuffs 14, sufficiently rigid to retain the ball in the position shown in FIGURE 3 at the completion of the cleaning operation. An operator can cause the ball to assume this position with complete dependability by merely pointing the cap downward during the last shaking motion or, alternatively, irrespective of the containers orientation, terminate the shaking operation when he hears an audible clicking produced by the ball striking the interior surface 15 of the cap 5. Preferably more than half of the ball will be held in this easily retrievable position by the stiff retaining bristles 14. It will be noted that the cap has interior dimensions slightly greater than a golf ball so as to loosely confine the ball when it rests on the stiff tuffs 14 with about a 1/16" clearance between the ball and the top of the cap. This loose confining permits a sort of lost motion when the ball clears the bristles 14 and aids in assuring proper positioning of the ball for easy removal. With the ball in this position, the cap may be removed and the ball easily retrieved from the cleaner. It should be understood that any suitable flexible annular retaining means could be substituted for the stiff bristles 14 as, for example, an inwardly extend-

ing annular washer sufficiently flexible to permit axial motion of the ball put yet sufficiently rigid to retain it in a raised position upon completion of the cleaning operation. In FIGURE 6, a flexible sealing washer 14' is provided in cap 5 with an inner diameter to retain the ball at the top of the stroke. Cap 5' in this view is a snap-on cap of flexible material.

An ancillary advantage is obtained by using stiff retaining bristle tuffs 14 since they are also effective to provide a stiff brushing action during the cleaning but since they have no appreciable axial extent, they do not unduly interfere with axial movement of the ball during shaking.

To effectively seal the device both when it is being used and when it is merely being carried, I provide an outwardly extending radial flange 22 at the mouth of the case. On the cap 5 is a corresponding outwardly extending U-shaped flange 16 having an upper outwardly-extending leg 17 and a lower bent-back leg 18. A sealing washer 19 is carried by the upper portion 17 of the flange 16 so that it engages the annular flange 22 on the case when the cap is locked in place.

As a locking device, I provide a plurality of projections or teeth 20 on the outwardly extending flange 15 that slip through peripheral slots 21 in the bent-back leg 12 of the U-shaped flange 16. As shown by the cutaway 21 of FIGURE 3, the projections or teeth 20 may be slightly inclined horizontally to assure a tight seal by camming the cap downward as the teeth engage the bent-back leg 18 when the cap is rotated. It should be understood, however, that any number of locking devices may be used and moreover that the cap could be constructed of a resilient material as in FIGURE 6 so that it merely snaps over the mouth of the case.

It will be clear that the device is of such a size that it can be conveniently carried in a golfer's jacket pocket or in the pocket of a golf bag. It can also be provided with a fastening device, such as a clip (not shown), which can be used to fasten the unit to a golf bag or golf cart. It might also be carried on a belt by a caddy or a golfer.

While a specific golf ball cleaner has been herein described in detail, it will be understood by those skilled in the art that modifications may be made without departing from the spirit and scope of the invention as expressed in the following claims.

I claim:

1. A portable golf ball cleaning device adapted to contain a cleansing medium, comprising an elongated tubular body having a closed end and an open end which is adapted to receive a golf ball, a removable closure for sealably engaging said open end, brushing means within said tubular body, said brushing means comprising brush material extending radially inward from said tubular body, the radially inward ends of said brush material defining an axially extending cylindrical brushing surface, said brushing means comprising a sole means for guiding and supporting said ball in a cylindrical chamber formed by said cylindrical brushing surface during a cleaning operation, said device having no parts axially movable within said chamber whereby when said ball is within said chamber and said open end is sealed by said closure, said ball may be moved axially within said chamber by shaking said device, said closure having a concave interior for accommodating a substantial portion of said ball, and a flexible retaining means adjacent said open end for retaining a substantial portion of a golf ball in an easily retrievable portion upon completion of a cleaning operation.

2. A device as defined in claim 1 wherein said flexible retaining means comprises a substantially continuous circumferential row of brushing material adjacent said open end and within said tubular body, said retaining brush material being stiffer than the brush material of said brushing means to retain a substantial portion of a golf ball in an easily retrievable position exterior of said open end upon completion of a cleaning operation.

3. A portable golf ball cleaning device adapted to contain a cleansing medium, comprising an elongated tubular body having a closed end and an open end which is adapted to receive a golf ball, a removable closure for sealably engaging said open end, brushing means within said tubular body, said brushing means comprising brush material extending radially inward from said tubular body, the radially inward ends of said brush material defining an axially extending cylindrical brushing surface, said brushing means comprising a sole means for guiding and supporting said ball in a cylindrical chamber formed by said cylindrical brushing surface during a cleaning operation, said device having no parts axially movable within said chamber whereby when said ball is within said chamber and said open end is sealed by said closure, said ball may be moved axially within said chamber by shaking said device, said tubular body having a radial flange adjacent said open end, said removable closure having a corresponding radial flange with an annular seal thereon, said device further comprising locking means for tightly maintaining said seal between said radial flanges when said device is in a closed position, said closure having a concave interior for accommodating a substantial portion of said ball, and said annular seal having an inside diameter that is smaller than the diameter of said ball to retain a substantial portion of said ball in an easily retrievable position upon completion of a cleaning operation.

4. The device set forth in claim 1 wherein said flexible retaining means comprises brushing material.

5. The device set forth in claim 1 wherein said brush material is arranged to form a plurality of axially extending helical brushing surfaces whereby rotation is imparted to a golf ball moving axially within said tubular body.

6. A golf ball cleaning device adapted to contain a cleansing medium, comprising an elongated tubular body having a closed end and an open end, said open end being adapted to receive a golf ball, a cap sealably closing said open end, and brushing means within said tubular body, said brushing means comprising brushing material extending radially inward from said tubular body, the radially inward ends of said brush material defining an axially extending cylindrical brush surface, said brushing means comprising a sole means for guiding and supporting said ball in a cylindrical chamber formed by said brushing surface during a cleaning operation, said device having no parts axially movable within said chamber, said ball being free to move axially of said body in engagement with said brushing surface due to the momentum of said ball when said ball is sealed in said device and said device is shaken to impart momentum to said ball, said brush material being arranged to form a plurality of axially extending helical brushing surfaces whereby rotation is imparted to a golf ball moving axially within said tubular body.

7. A golf ball cleaning device adapted to contain a cleansing medium, comprising an elongated tubular body having a closed end and an open end, said open end being adapted to receive a golf ball, a cap sealably closing said open end, and brushing means within said tubular body, said brushing means comprising brushing material extending radially inward from said tubular body, the radially inward ends of said brush material defining an axially extending cylindrical brush surface, said brushing means comprising a sole means for guiding and supporting said ball in a cylindrical chamber formed by said brushing surface during a cleaning operation, said device having no parts axially movable within said chamber, said ball being free to move axially of said body in engagement with said brushing surface due to the momentum of said ball when said ball is sealed in said device and said device is shaken to impart momentum to said ball, said brush material comprising a plurality of circumferentially spaced, axially extending, helical brushing surfaces, each of said helical brushing surfaces containing a plurality of circumferentially spaced, axially extending, helical rows of bristle tuffs, said circumferential spacing

between said rows being less than the circumferential spacing between said helical brushing surfaces.

8. A golf ball cleaning device adapted to contain a cleansing medium, comprising an elongated tubular body having a closed end and an open end, said open being adapted to receive a golf ball, an imperforate closure for sealably closing said open end, and brushing means within said tubular body, said brushing means comprising brush material extending radially inward from said tubular body, the radially inward ends of said brush material defining an axially extending cylindrical brushing surface, said ball being free to move axially of said body in engagement with said brushing surface due to the momentum of said ball when said ball is sealed in said device and said device is shaken to impart momentum to said ball, said closure having a concave interior for accommodating a substantial portion of said ball, and flexible means adjacent said open end for retaining a substantial portion of said ball exterior of said tubular body and within said concave interior of said closure at the termination of a cleaning operation.

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